

## *Campylotropis* (Leguminosae) of China, an Enumeration and Distribution

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*Campylotropis* consists of 37 species in the world of which 32 are distributed in China. This paper provides an enumeration of the Chinese species and infraspecific taxa with a new key to these taxa and recent bibliography for the taxa, and an analysis of their geographical distribution. Among the correct names six are lectotypified, and morphological variations in *C. macrocarpa* and *C. polyantha* are noted. Among 32 species 20 are endemic to China of which, except one known to be recorded in SW China, nine are endemic to Yunnan, three to Sichuan, one to Xizang and six to more than two Provinces including Yunnan, Sichuan, and Xizang. Yunnan has the richest flora of *Campylotropis* in the world having 27 taxa including 12 endemic taxa consisting nine species, one subspecies and two varieties.

**Key words:** *Campylotropis*, China, determination key, distribution, lectotype.

China is the center of distribution of *Campylotropis* (Fu 1987, Iokawa and Ohashi 2002, Ohashi 2005). Since the first Chinese species of the genus was described by Bunge in 1833 as *Lespedeza macrocarpa* Bunge, a number of species have been recorded by many taxonomists, especially by Schindler between 1912 and 1926, under *Lespedeza* or *Campylotropis* from China. Fu (1987) published the first revision of *Campylotropis* of China as a whole and recognized 28 species. The result was published also in *Flora Reipublicae Popularis Sinicae* vol. 41 (Fu 1995).

Iokawa and Ohashi (2002, 2003, 2004) accomplished a revision of *Campylotropis*. They recognized 37 species with 12 infraspecific taxa (six subspecies, three varieties and three forms) in the genus. Among the species 31 with 8 infraspecific taxa (three subspecies, three varieties and two forms) are recorded from China of which four

species are represented by infraspecific taxa which do not contain the type taxa. They are *C. bonii* var. *stipellata*, *C. cytisoides* f. *parviflora*, *C. pinetorum* subsp. *velutina* and *C. speciosa* subsp. *eriocarpa*. The treatment by Iokawa and Ohashi on Chinese taxa agrees mostly with that of Fu (1987, 1995), and 21 species are accepted as valid in both works. On the other hand, eight species, one subspecies, one variety and one form recognized by Iokawa and Ohashi (2002) are not treated by Fu (1987, 1995): *Campylotropis alba* Iokawa & H. Ohashi, *C. alopochroa* H. Ohashi, *C. decora* (Kurz) Schindl., *C. grandifolia* Schindl., *C. luhitensis* H. Ohashi, *C. pauciflora* C. J. Chen, *C. speciosa* (Royle ex Schindl.) Schindl. (only subsp. *eriocarpa* (Schindl.) Iokawa & H. Ohashi occurs in China), and *C. teretiracemosa* C. J. Chen; *C. pinetorum* subsp. *albopubescens* (Iokawa & H. Ohashi) Iokawa & H. Ohashi; *C. bonii* var. *stipellata* Iokawa & H. Ohashi; and *C.*

*macrocarpa* f. *alba* (S. Y. Wang) Iokawa & H. Ohashi. Twelve taxa adopted by Fu (1987, 1995) are regarded by Iokawa and Ohashi (2002, 2004) as synonyms with other Chinese taxa. In contrast *C. sargentiana* Schindl. regarded by Fu (1987, 1995) as a synonym of *C. polyantha* (Franch.) Schindl. is adopted by Iokawa and Ohashi (2002).

Seven taxa are commonly adopted in their works but treated at different rank. Differences between the results of these two works on Chinese *Campylotropis* are compared in Table 1.

As a basic taxonomic analysis of the genus *Campylotropis* (Leguminosae: Papilionoideae tribe Desmodieae) for Flora

Table 1. List of Chinese *Campylotropis* by Fu (1987, 1995) and Iokawa and Ohashi (2002)

Fu (1987, 1995)	Iokawa and Ohashi (2002)
—	<i>C. alba</i> Iokawa & H. Ohashi
—	<i>C. alopochroa</i> H. Ohashi
<i>C. argentea</i> Schindl.	<i>C. argentea</i> Schindl.
<i>C. bonii</i> Schindl.	<i>C. bonii</i> Schindl. var. <i>stipellata</i> Iokawa & H. Ohashi
<i>C. brevifolia</i> Ricker	
<i>C. yajiangensis</i> P. Y. Fu var. <i>deronica</i> P. Y. Fu	<i>C. brevifolia</i> Ricker
<i>C. capillipes</i> (Franch.) Schindl.	<i>C. capillipes</i> (Franch.) Schindl. ssp. <i>capillipes</i>
<i>C. prainii</i> (Coll. & Hemsl.) Schindl.	ssp. <i>prainii</i> (Coll. & Hemsl.) Iokawa & H. Ohashi
<i>C. parviflora</i> (Kurz) Schindl.	<i>C. cytisoides</i> Miq. f. <i>parviflora</i> (Kurz) Iokawa & H. Ohashi
—	<i>C. decora</i> (Kurz) Schindl.
<i>C. delavayi</i> (Franch.) Schindl.	<i>C. delavayi</i> (Franch.) Schindl.
<i>C. diversifolia</i> (Hemsl.) Schindl.	<i>C. diversifolia</i> (Hemsl.) Schindl.
<i>C. fulva</i> Schindl.	<i>C. fulva</i> Schindl.
—	<i>C. grandifolia</i> Schindl.
<i>C. harmsii</i> Schindl.	<i>C. harmsii</i> Schindl.
<i>C. henryi</i> (Schindl.) Schindl.	<i>C. henryi</i> (Schindl.) Schindl.
<i>C. hirtella</i> (Franch.) Schindl.	<i>C. hirtella</i> (Franch.) Schindl.
<i>C. howellii</i> Schindl.	<i>C. howellii</i> Schindl.
<i>C. latifolia</i> (Dunn) Schindl.	<i>C. latifolia</i> (Dunn) Schindl.
—	<i>C. luhitensis</i> H. Ohashi
<i>C. macrocarpa</i> (Bunge) Rehder var. <i>macrocarpa</i> f. <i>macrocarpa</i> f. <i>lanceolata</i> P. Y. Fu	<i>C. macrocarpa</i> (Bunge) Rehder var. <i>macrocarpa</i> f. <i>macrocarpa</i>
—	f. <i>alba</i> (S.Y.Wang) Iokawa & H. Ohashi
var. <i>giraldii</i> (Schindl.) P. Y. Fu f. <i>giraldii</i> f. <i>hupehensis</i> (Pamp.) P. Y. Fu f. <i>microphylla</i> P. Y. Fu f. <i>longepedunculata</i> (Ricker) P. Y. Fu	var. <i>hupehensis</i> (Pamp.) Iokawa & H. Ohashi

of China, this paper prepares a new key to the Chinese taxa, an enumeration of the taxa with six newly lectotypified names, and an analysis of their distribution. This work is based mainly on our revision of the genus (Iokawa and Ohashi 2002, 2003) with additional notes from recent contributions of Chinese *Campylotropis* by P. H. Huang

(2001) and X. F. Gao (2006). This paper provides photographs of the lectotypes newly designated here. *Campylotropis polyantha* is often intermixed with *C. macrocarpa*, hence the range of variation in *C. polyantha* is also shown in photographs. This study was made mostly by examination of specimens kept in the herbaria cited in our previous paper

Fu (1987, 1995)	Iokawa and Ohashi (2002)
—	<i>C. pauciflora</i> C. J. Chen
<i>C. pinetorum</i> (Kurz) Schindl. ssp. <i>velutina</i> (Dunn) H. Ohashi	<i>C. pinetorum</i> (Kurz) Schindl. ssp. <i>velutina</i> (Dunn) H. Ohashi
—	ssp. <i>albopubescens</i> Iokawa & H. Ohashi
<i>C. polyantha</i> (Franch.) Schindl. var. <i>polyantha</i> f. <i>polyantha</i> f. <i>macrophylla</i> P. Y. Fu f. <i>souliei</i> (Schindl.) P. Y. Fu var. <i>tomentosa</i> P. Y. Fu <i>C. tomentosipetiolata</i> P. Y. Fu	<i>C. polyantha</i> (Franch.) Schindl. var. <i>polyantha</i>  f. <i>polyantha</i>
<i>C. polyantha</i> var. <i>leiocarpa</i> (Pamp.) E. Peter	f. <i>leiocarpa</i> (Pamp.) Iokawa & H. Ohashi
<i>C. neglecta</i> Schindl. (synonym of <i>C. polyantha</i> )	var. <i>neglecta</i> (Schindl.) Iokawa & H. Ohashi
—	<i>C. sargentiana</i> Schindl.
<i>C. rockii</i> Schindl. <i>C. sulcata</i> Schindl.	<i>C. speciosa</i> (Schindl.) Schindl. ssp. <i>eriocarpa</i> (Schindl.) Iokawa & H. Ohashi
<i>C. tenuiramea</i> P. Y. Fu	<i>C. sulcata</i> Schindl.
—	<i>C. tenuiramea</i> P. Y. Fu
—	<i>C. teretiracemosa</i> C. J. Chen
<i>C. trigonoclada</i> (Franch.) Schindl.	* <i>C. thomsonii</i> (Baker) Schindl. (recorded by Gao (2006) from China)
<i>C. bonatiana</i> (Pamp.) Schindl.	<i>C. trigonoclada</i> (Franch.) Schindl. var. <i>trigonoclada</i> var. <i>bonatiana</i> (Pamp.) Iokawa & H. Ohashi
<i>C. wenshaaica</i> P. Y. Fu	<i>C. wenshaaica</i> P. Y. Fu
<i>C. wilsonii</i> Schindl.	<i>C. wilsonii</i> Schindl.
<i>C. yajiangensis</i> P. Y. Fu var. <i>yajiangensis</i>	
<i>C. yunnanensis</i> (Franch.) Schindl. var. <i>yunnanensis</i> var. <i>zhongdenensis</i> P. Y. Fu var. <i>filipes</i> (Ricker) P. Y. Fu	<i>C. yunnanensis</i> (Franch.) Schindl. ssp. <i>yunnanensis</i>  ssp. <i>filipes</i> (Ricker) P. Y. Fu

(Iokawa and Ohashi 2002) and recent reexaminations of those in A, GH, K, TI and TUS.

**Key to the species and infraspecific taxa of *Campylotropis* in China**

1. Leaves dimorphic; lower leaves petiolate with obovate leaflets and distinct rachis; upper leaves sometimes subsessile ..... 2
1. Leaves not dimorphic ..... 3
2. Upper leaflets deltoid ..... *C. diversifolia*
2. Upper leaflets elliptic, orbicular or transversely elliptic ..... *C. harmsii*
3. Leaflets consistently stipellate ..... 4
3. Leaflets exstipellate, rarely including a few stipellate leaves ..... 5
4. Glandular hairs present on pedicel and calyx ..... *C. polyantha*
4. Glandular hairs absent ..... *C. yunnanensis*
5. Glandular hairs present on pedicel and calyx ..... 6
5. Glandular hairs absent ..... 19
6. Calyx lobes more than twice as long as tube, more than 3 mm long ..... 7
6. Calyx lobes usually as long as tube or, if longer, less than twice as long as tube ..... 8
7. Bracts narrowly ovate, usually shorter than 3 mm long; leaflet upper surface glabrous ..... *C. delavayi*
7. Bracts linear, usually more than 3.5 mm long; leaflet upper surface densely puberulous ..... *C. pinetorum*
8. Leaflet upper surface usually densely or subdensely puberulous with patent, very short hairs, rarely glabrescent; branches velutinous ..... 9
8. Leaflet upper surface glabrous or subdensely pubescent; branches not velutinous ..... 11
9. Hairs white; leaflets broadly elliptic to ovate, often more than 8 cm long ..... *C. latifolia*
9. Hairs tawny to pale brown; leaflets narrowly ovate to elliptic, usually less than 7 cm long ..... 10
10. Racemes extended, often more than 10 cm long; bracts narrowly ovate, 2–2.5 mm long; bracteoles ca. 1 mm long ..... *C. fulva*
10. Racemes usually less than 9 cm long; bracts narrowly ovate, 3–5 mm long; bracteoles ca. 2 mm long ..... *C. sulcata*
11. Flowers small; standard usually less than 9 mm long ..... 12
11. Flowers larger; standard usually more than 10 mm long ..... 14
12. Pods more than 10 mm long; leaflet lower surface densely white pubescent ..... *C. luhitensis*
12. Pods less than 8 mm long ..... 13
13. Leaflet lower surface with sparse appressed short hairs; pod apex obtuse ..... *C. cytisoides*
13. Leaflet lower surface with dense white silky hairs; pod apex rounded ..... *C. thomsonii*
14. Leaflets usually less than 1 cm long, obdeltoid ..... *C. wilsonii*
14. Leaflets usually more than 2 cm long, not obdeltoid ..... 15
15. Bracts usually caducous before flowering ..... *C. macrocarpa*
15. Bracts mostly persistent until fruiting ..... 16
16. Inflorescences usually paniculate; bracts mostly more than 2 mm long; petioles not dorsally angled ..... 17
16. Inflorescences not paniculate; bracts mostly less than 2 mm long ..... 18
17. Leaflets deltoid to ovate; lateral nerves thick, prominent beneath ..... *C. hirtella*
17. Leaflets obovate to oblong; lateral nerves not prominent ..... *C. alopochroa*
18. Petioles sulcate, neither dorsally angled nor winged ..... *C. decora*
18. Petioles dorsally angled, often slightly convex above, bisulcate and narrowly winged along both sides ..... *C. henryi*
19. Petioles dorsally angled, often narrowly

- winged along both sides; young branches distinctly angled ..... 20
19. Petioles neither dorsally angled nor winged ..... 21
20. Young branches quadrangular; corolla purple ..... *C. grandifolia*
20. Young branches triquetrous; corolla yellow or purple ..... *C. trigonoclada*
21. Calyx lobes 3 times as long as tube; flowers subsessile, clustered at top of peduncle as an umbel; leaflet upper surface white pubescent ..... *C. alba*
21. Calyx lobes usually nearly equal to tube or, if longer, less than two times as long as tube; inflorescences not umbelliform ..... 22
22. Leaflet upper surface densely puberulous ..... 23
22. Leaflet upper surface glabrous, sparsely pubescent or sericeous ..... 24
23. Calyx, inflorescences, young branches and leaflet lower surface densely appressed sericeous; leaflets elliptic to oblong ..... *C. argentea*
23. Calyx, inflorescences, young branches and leaflet lower surface densely white-villous; leaflets obdeltoid to broadly obovate ..... *C. brevifolia*
24. Pedicels usually less than 5 mm long ..... 25
24. Pedicels usually more than 5 mm long ..... 28
25. Flowers clustered at upper part of racemes ..... 26
25. Flowers distributed equally in racemes ..... 27
26. Flowers larger; standard ca. 10 mm long; pedicels more than 1.5 mm long; racemes not terete ..... *C. howellii*
26. Flowers small; standard ca. 7 mm long; pedicels less than 1.5 mm long; racemes terete, very densely flowered, spike-like ..... *C. teretiracemosa*
27. Pods ovate to elliptic, pubescent; inflorescences racemose ..... *C. speciosa*
27. Pods narrowly ovate to narrowly elliptic,

- lateral surface glabrous; inflorescences paniculate ..... *C. wenshaaica*
28. Flowers 10 or more in a raceme ..... 29
28. Flowers less than 8 in a raceme ..... 31
29. Leaflets obdeltoid to obcordate; lateral nerves dense, straight, parallel ..... *C. bonii*
29. Leaflets elliptic to obovate; lateral nerves arcuate with netted venation ..... 30
30. Pedicels slender, 6–14 mm long; leaflets chartaceous ..... *C. capillipes*
30. Pedicels thick, 5–6 mm long; leaflets subcoriaceous ..... *C. sargentiana*
31. Pedicels more than 15 mm long; vexillary stamen connate to tube at base for about one-sixth of its length ..... *C. pauciflora*
31. Pedicels less than 8 mm long; vexillary stamen connate to tube at base for about one-third of its length ..... *C. tenuiramea*

### Enumeration of the species in alphabetical order of specific epithets

In the following enumeration the original publication and other bibliography for the taxa are not cited. Refer to our revision (Iokawa and Ohashi 2002, 2003) to avoid duplication of bibliographic citation between this and our previous papers. The original publications of the names are, however, cited when the lectotype is designated in this paper.

The infraspecific taxa are shown with the key within their mother species.

1. ***Campylotropis alba*** Iokawa & H. Ohashi: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 195 (2002).

Distribution: SW China (probably a place in Guizhou, Sichuan or Yunnan).

2. ***Campylotropis alopochroa*** H. Ohashi: P. Y. Fu in Bull. Bot. Res., Harbin **7**: 27, in nota (1987), & in FRPS. **41**: 97, in nota (1995); Iokawa & H. Ohashi in J. Jpn. Bot.



77: 197 (2002).

Distribution: China (Xizang).

Fu treated *Campylotropis alopochroa* as an imperfectly known species under *C. hirtella* and Gao (2006) treated the former as a synonym of the latter. *Campylotropis alopochroa* is distinguished from *C. hirtella* by the smaller flowers (ca. 12 mm long against 13–15 mm long of the latter) and shape of leaflets, i.e., obovate to elliptic with inconspicuous lateral nerves in the former, while deltoid with prominent lateral nerves on the lower surface in the latter.

3. ***Campylotropis argentea*** Schindl. in Repert. Spec. Nov. Regni. Veg. **11**: 426 (1912) [**Type**: China. Yunnan: Mengzi Xian, 5000 ft. A. Henry 10384 (lecto K designated here; islecto A, CAL, E, MO, PE)]: P. Y. Fu, FRPS. **41**: 123 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 201 (2002); X. F. Gao, Fl. Yunnan. **10**: 553 (2006).

Distribution: China (Yunnan).

Schindler (1912) described this species based on A. Henry 10384. He did not designate holotype but cited isotypes kept in A, B, and K. Duplicates are also found in CAL, E, MO and PE. We select here the isotype in K as the lectotype of *Campylotropis argentea* Schindl. (Fig. 1).

4. ***Campylotropis bonii*** Schindl.: P. Y. Fu, FRPS. **41**: 113 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 201 (2002).

var. ***stipellata*** Iokawa & H. Ohashi in J. Jpn. Bot. **79**: 227 (2004).

Distribution: China (Guangxi).

*Campylotropis bonii* was recorded by Fu (1995) for the first time from China, but the Chinese plants differ from var. *bonii* in having stipels. Var. *bonii* is confined to Vietnam and Thailand.

5. ***Campylotropis brevifolia*** Ricker: P. Y. Fu, FRPS. **41**: 107 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 203 (2002).

*C. yajiangensis* P. Y. Fu var. *deronica* P. Y. Fu: P. Y. Fu, FRPS. **41**: 108 (1995).

Distribution: China (Sichuan and Xizang).

Ricker (1946) designated the holotype of *Campylotropis brevifolia* Ricker: Sichuan. Datong to Delifu, Yalong Jiang, 1250–1500 m. Handel-Mazzetti 5604 (A; iso E). It was cited by Iokawa and Ohashi (2002) erroneously as a syntype and the specimen was shown in Fig. 15a in Iokawa and Ohashi (2002).

6. ***Campylotropis capillipes*** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 98 (1995); P. H. Huang, High. Pl. China **7**: 178 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 206 (2002); X. F. Gao, Fl. Yunnan. **10**: 557 (2006).

*Lespedeza capillipes* Franch., Pl. Delavay. 165 (1890) [**Type**: China. Yunnan. in monte Hee-chan-men. Delavay 2733 (lecto P designated here; islecto K; photo in A)].

Franchet (1890) cited two specimens in the original description of *Lespedeza capillipes* Franch. They are syntypes, Delavay 530 (P) and Delavay 2733 (P). We select the latter as the lectotype of the name. This was collected in monte Hee-chan-men in Yunnan. An islectotype in K is shown in Fig. 2.

#### Key to the subspecies:

1. Calyx lobes distinctly shorter than tube, 1–1.5 mm long; racemes 2–8 cm long; upper surface of leaflets glabrous  
..... subsp. *prainii*
1. Calyx lobes almost as long as tube, more than 1.5 mm long; racemes short, 1.5–3 cm long; upper surface of leaflets sparsely appressed short hairy  
..... subsp. *capillipes*

6-1. *C. capillipes* subsp. ***capillipes***: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 209 (2002).

Distribution: China (SW Sichuan and N



Fig. 1. Lectotype of *Campylotropis argentea* Schindl. A. Henry 10384 (K).



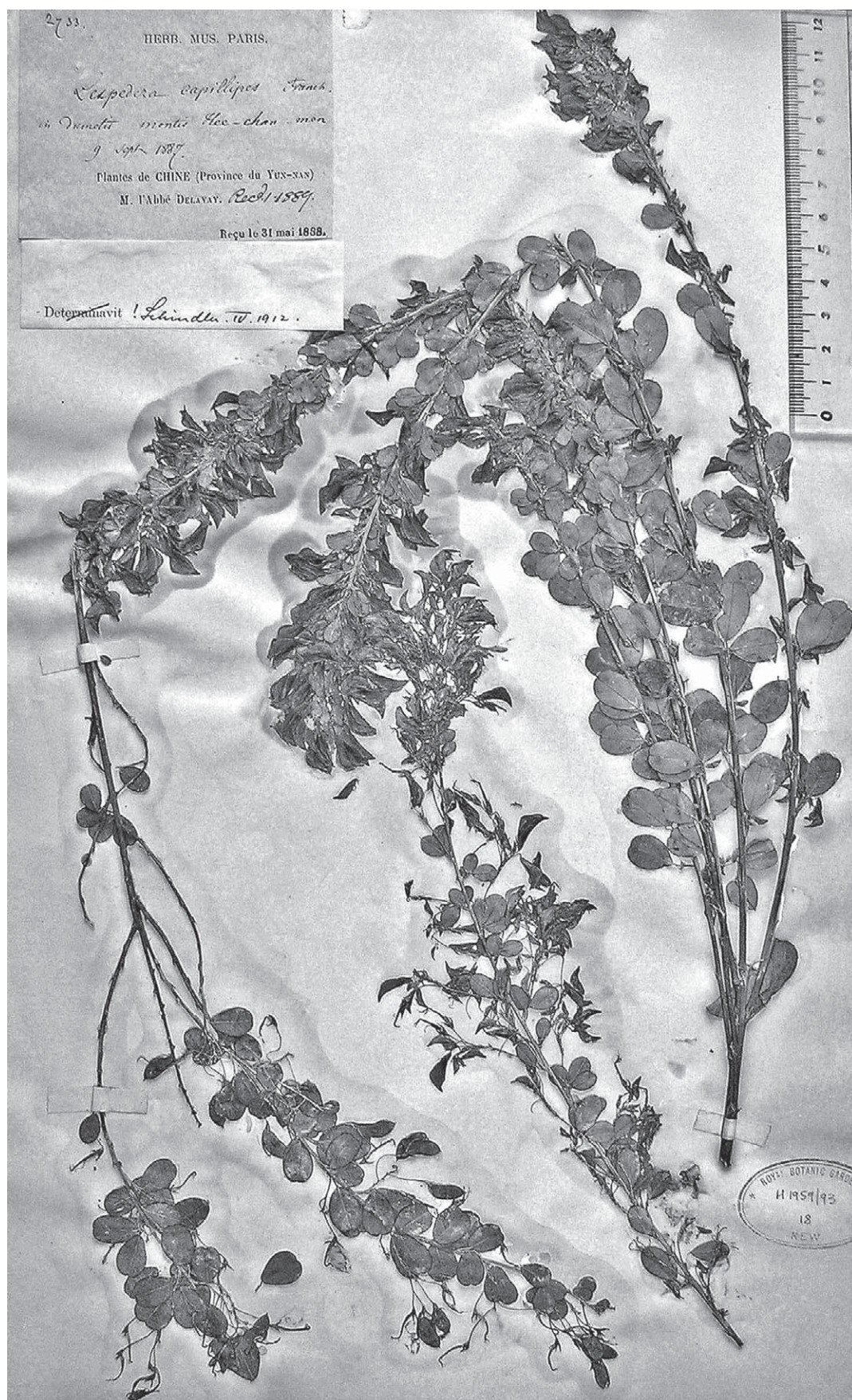


Fig. 2. Isolectotype of *Lespedeza capillipes* Franch. Delavay 2733 (K).



Yunnan).

6-2. *C. capillipes* subsp. **prainii** (Coll. & Hemsl.) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 209 (2002).

*C. prainii* (Coll. & Hemsl.) Schindl.: P. Y. Fu, FRPS. **41**: 98 (1995); P. H. Huang, High. Pl. China **7**: 178 (2001).

Distribution: China (W. Guangxi and S. Yunnan), Myanmar and Thailand.

Gao (2006) regarded *C. prainii* as a synonym of *C. capillipes*, but it differs from the latter clearly in leaflets, calyx and racemes as shown in Iokawa and Ohashi (2002).

7. **Campylotropis cytisoides** Miq.: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 210 (2002).

f. **parviflora** (Kurz) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 212 (2002).

*C. parviflora* (Kurz) Schindl.: P. Y. Fu, FRPS. **41**: 123 (1995); X. F. Gao, Fl. Yunnan. **10**: 558 (2006).

Distribution: China (S. Yunnan), Laos, Myanmar, Thailand and Vietnam.

*Campylotropis cytisoides* f. *cytisoides* is endemic to Indonesia (Java, Bali, Lombok and Timor) and disjunctively separated from the distribution area of f. *parviflora* (cf. Fig. 24a, distribution map, in Iokawa and Ohashi 2002).

8. **Campylotropis decora** (Kurz) Schindl.: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 213 (2002).

Distribution: China (S. Yunnan), Laos, Myanmar and Thailand.

This species was recorded from China by Iokawa and Ohashi (2002) based on the specimen shown in Fig. 3.

9. **Campylotropis delavayi** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 100 (1995); P. H. Huang, High. Pl. China **7**: 179 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 216 (2002); X. F. Gao, Fl. Yunnan. **10**: 552 (2006).

Distribution: China (Guizhou, Sichuan and Yunnan).

10. **Campylotropis diversifolia** (Hemsl.) Schindl.: P. Y. Fu, FRPS. **41**: 102 (1995); P. H. Huang, High. Pl. China **7**: 179 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 217 (2002); X. F. Gao, Fl. Yunnan. **10**: 557 (2006).

Distribution: China (Yunnan).

11. **Campylotropis fulva** Schindl.: P. Y. Fu, FRPS. **41**: 100 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 251 (2002).

Distribution: China (Yunnan).

12. **Campylotropis grandifolia** Schindl. in Repert. Spec. Nov. Regni. Veg. **11**: 346 (1912) [**Type**: China. Yunnan. Mile as “Mile”. A. Henry 9890 (lecto K, designated here)]: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 252 (2002).

Distribution: China (Yunnan).

Schindler (1912) described this species with citation of two specimens from K and A. They are syntypes, A. Henry 9888 (A) and A. Henry 9890 (K). One of the syntypes kept in A was shown in Fig. 25b in Iokawa and Ohashi (2002) and was cited as Henry 9888 (A). However, a label of another syntype, Henry 9890, is also mounted on the same sheet side by side. Two kinds of labels are mounted together on the sheet of the specimen in A. We designate here Henry 9890 (K) as the lectotype of *Campylotropis grandifolia* Schindl. (Fig. 4).

Fu (1987, 1995) cited this species under *Campylotropis henryi* as an imperfectly known species. These two species share quadrangular young branches and a narrowly winged petiole, but *C. grandifolia* differs from the latter in lacking glandular hairs on inflorescences, pedicels, calyx, etc.

13. **Campylotropis harmsii** Schindl. in Repert. Spec. Nov. Regni. Veg. **11**: 342

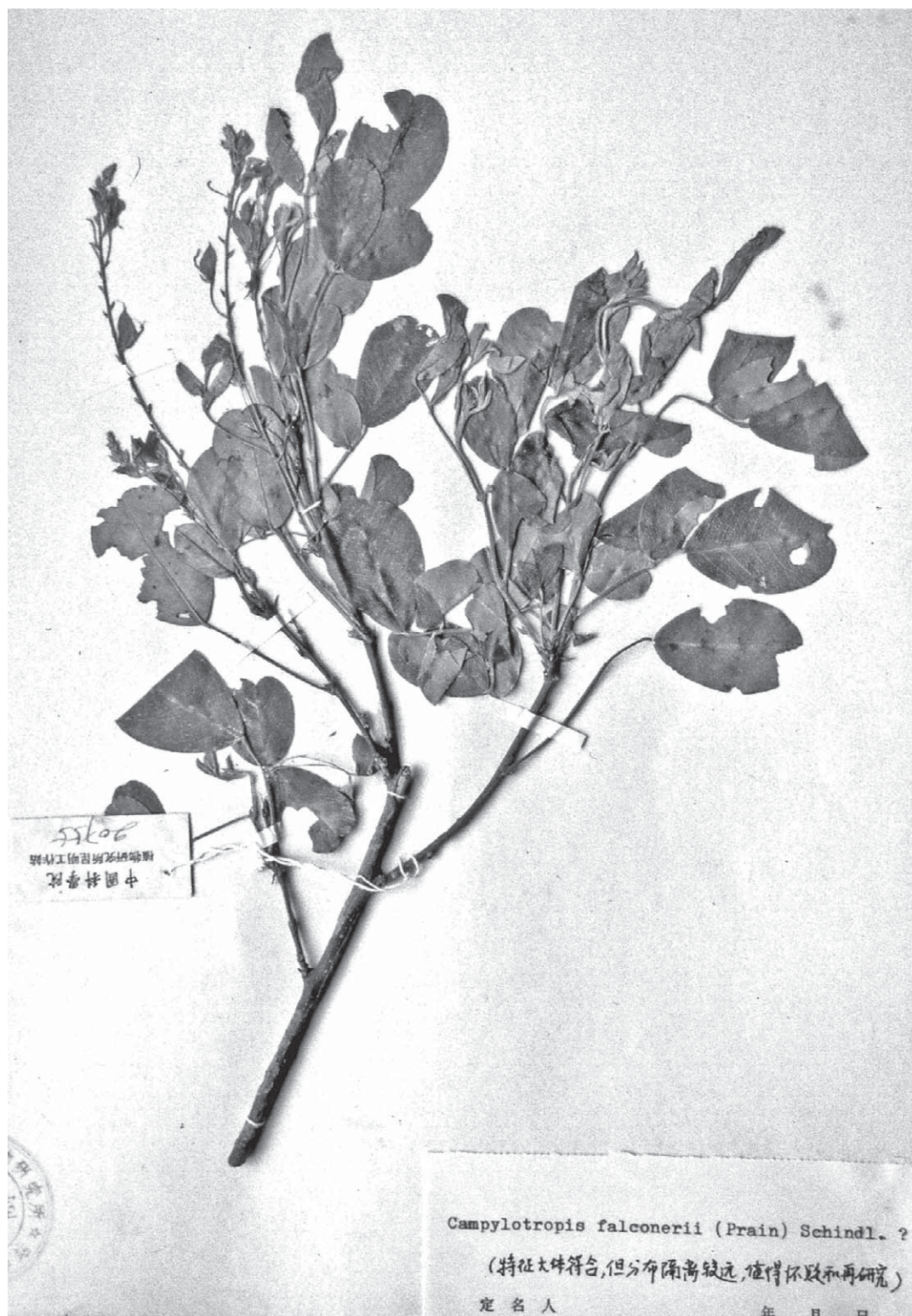


Fig. 3. *Campylotropis decora* from China.





Fig. 4. Lectotype of *Campylotropis grandifolia* Schindl. A. Henry 9890 (K).



(1912) [**Type:** China. Yunnan. Szemao. A. Henry 9803D (lecto K designated here; isolecto A, B, E)]: P. Y. Fu, FRPS. **41**: 97 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 255 (2002); X. F. Gao, Fl. Yunnan. **10**: 556 (2006).

Distribution: China (Yunnan) and Thailand.

Schindler (1912) described this species based on A. Henry 9803D collected in Yunnan: Szemao west, altitude 4500 ft. above the sea. He did not designate a holotype but cited syntypes kept in B, K and A. A duplicate is held in E. We designate here one of the syntypes in K as the lectotype (Fig. 5).

14. **Campylotropis henryi** (Schindl.) Schindl.: P. Y. Fu, FRPS. **41**: 103 (1995); P. H. Huang, High. Pl. China **7**: 179 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 258 (2002); X. F. Gao, Fl. Yunnan. **10**: 562 (2006).

*Lespedeza henryi* Schindl. in Repert. Spec. Nov. Regni. Veg. **9**: 517 (1911) [**Type:** China. Yunnan. Yuanchang, 750 m. A. Henry 13212 (lecto K, designated here; isolecto A, CAL, E, K, MO)].

Distribution: China (Guizhou and Yunnan).

When he described *Lespedeza henryi* Schindl., Schindler (1911) cited a single specimen kept in B. The specimen was cited by Iokawa and Ohashi (2002) as holotype with isotypes in A, CAL, E, K and MO. Since the holotype was lost in World War II, we designate here the isotype in K as lectotype (Fig. 6) based on Art. 9.9 and 9.10 (McNeill et al. 2006).

15. **Campylotropis hirtella** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 95 (1995); P. H. Huang, High. Pl. China **7**: 177 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 259 (2002); X. F. Gao, Fl. Yunnan. **10**: 569 (2006).

Distribution: China (Guizhou, Sichuan, Xizang and Yunnan) and India (Assam).

16. **Campylotropis howellii** Schindl.: P. Y. Fu, FRPS. **41**: 112 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 262 (2002); X. F. Gao, Fl. Yunnan. **10**: 563 (2006).

Distribution: China (Yunnan).

17. **Campylotropis latifolia** (Dunn) Schindl.: P. Y. Fu, FRPS. **41**: 124 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 264 (2002); X. F. Gao, Fl. Yunnan. **10**: 555 (2006).

Distribution: China (Yunnan).

18. **Campylotropis luhitensis** H. Ohashi: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 264 (2002).

Distribution: China (Xizang) and Myanmar.

This species was recorded from China first by Iokawa and Ohashi as cited above. It resembles *Campylotropis argentea* and *C. brevifolia* in having dense white hairs on young branches, lower surfaces of leaflets and calyxes, but differs from them in having a glabrous upper surface of leaflets and glandular hairs on the inflorescence.

19. **Campylotropis macrocarpa** (Bunge) Rehder: P. Y. Fu, FRPS. **41**: 113 (1995); P. H. Huang, High. Pl. China **7**: 180 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 267 (2002); X. F. Gao, Fl. Yunnan. **10**: 564 (2006).

Distribution (as species): China (Anhui, Beijing, Fujian, Gansu, Guangdong, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Neimenggu, Shaanxi, Shandong, Sichuan, Taiwan, SE. Xizang, Yunnan and Zhejiang) and Korea.

#### Key to the infraspecific taxa:

1. Lateral surface of pods pubescent; calyx lobes almost as long as the tube, 2.2–3



Fig. 5. Lectotype of *Campylotropis harmsii* Schindl. A. Henry 9803D (K).





Fig. 6. Lectotype of *Campylotropis henryi* Schindl. A. Henry 13212 (K).



- mm long ..... var. *hupehensis*  
 1. Lateral surface of pods glabrous; calyx lobes shorter than the tube, 0.8–1.2 mm long (var. *macrocarpa*) ..... 2  
 2. Flowers white ..... f. *alba*  
 2. Flowers purple to pinkish white ..... f. *macrocarpa*

19-1. var. **macrocarpa**: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 270 (2002).

19-1-1. f. **macrocarpa**: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 270 (2002); X. F. Gao, Fl. Yunnan. **10**: 564 (2006).

*Lespedeza macrocarpa* Bunge, Enum. Pl. Chin. Bor. 18 (1833), & in Mem. Acad. Sci. St. Petersburg. Sav. Etrang. **2**: 92 (1833).

*Campylotropis chinensis* Bunge, Zap. Izd. Kazansk. Univ. **4**: 157 (1835).

*L. ciliata* Benth. in J. Bot. Kew Misc. **4**: 48 (1852), in nota.

*L. ichangensis* Schindl. in Repert. Spec. Nov. Regni. Veg. **9**: 515 (1911).

*L. muehleana* Schindl. in Repert. Spec. Nov. Regni. Veg. **9**: 517 (1911), p. p., quoad specim. cit. Wilson 1168 (B).

*L. rosthornii* Schindl. in Repert. Spec. Nov. Regni. Veg. **9**: 516 (1911).

*L. distincta* L. H. Bailey, Gent. Herb. 31 (1920).

*C. gracilis* Ricker in J. Wash. Acad. Sci. **36**: 38 (1946).

*C. hersii* Ricker in J. Wash. Acad. Sci. **36**: 38 (1946).

*C. huberi* Ricker in J. Wash. Acad. Sci. **36**: 38 (1946).

*C. mortolana* Ricker in J. Wash. Acad. Sci. **36**: 39 (1946).

*C. smithii* Ricker in J. Wash. Acad. Sci. **36**: 40 (1946).

*C. macrocarpa* subsp. *hengduanshanensis* C. J. Chen in Acta Bot. Yunnan. **10**: 435 (1988).

*C. macrocarpa* f. *lanceolata* P. Y. Fu: P. Y. Fu, FRPS. **41**: 113 (1995); X. F. Gao, Fl. Yunnan. **10**: 565 (2006).

Distribution: as in species.

19-1-2. f. **alba** (S. Y. Wang) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 271 (2002).

Distribution: China (Henan).

19-2. var. **hupehensis** (Pamp.) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 272 (2002).

*C. macrocarpa* (Bunge) Rehder var. *giraldii* (Schindl.) P. Y. Fu: P. Y. Fu, FRPS. **41**: 116 (1995).

*C. macrocarpa* (Bunge) Rehder f. *giraldii* (Schindl.) P. Y. Fu, FRPS. **41**: 116 (1995).

*C. macrocarpa* f. *hupehensis* (Pamp.) P. Y. Fu: P. Y. Fu, FRPS. **41**: 117 (1995).

*C. macrocarpa* f. *microphylla* P. Y. Fu: P. Y. Fu, FRPS. **41**: 117 (1995).

*C. macrocarpa* f. *longepedunculata* (Ricker) P. Y. Fu: P. Y. Fu, FRPS. **41**: 117 (1995).

Distribution (var. *hupehensis*): China (Gansu, Guangdong, Guizhou, Hebei, Henan, Hubei, Shaanxi, Shanxi, Sichuan and Taiwan).

*Campylotropis macrocarpa* (Bunge) Rehder is the most widely distributed species of the genus in China and extends to Korea in East. However, the species has not been found in Yunnan in spite of the region having the richest flora of *Campylotropis* in China. Iokawa and Ohashi (2002, on page 270) noted that specimens referred to *C. macrocarpa* collected in Yunnan were, so far as they examined, referable to *C. polyantha*. For example, C. Y. Wu et al. (1984) cited Schoch 369 (A) as a voucher specimen of *C. macrocarpa* in Yunnan (Fig. 7), but the specimen is referable to *C. polyantha* because of the presence of stipels that is a clear difference between the two species.

Gao (2006) stated that *Campylotropis macrocarpa* f. *lanceolata* P. Y. Fu is found in Yunnan, though f. *macrocarpa* is not. We considered that *C. macrocarpa* f. *lanceolata* is merely a form with narrowly ovate leaflets which is included within a variation range of *C. macrocarpa* f. *macrocarpa*. The stipels of f. *lanceolata* in the sense of Gao (2006) are not described.

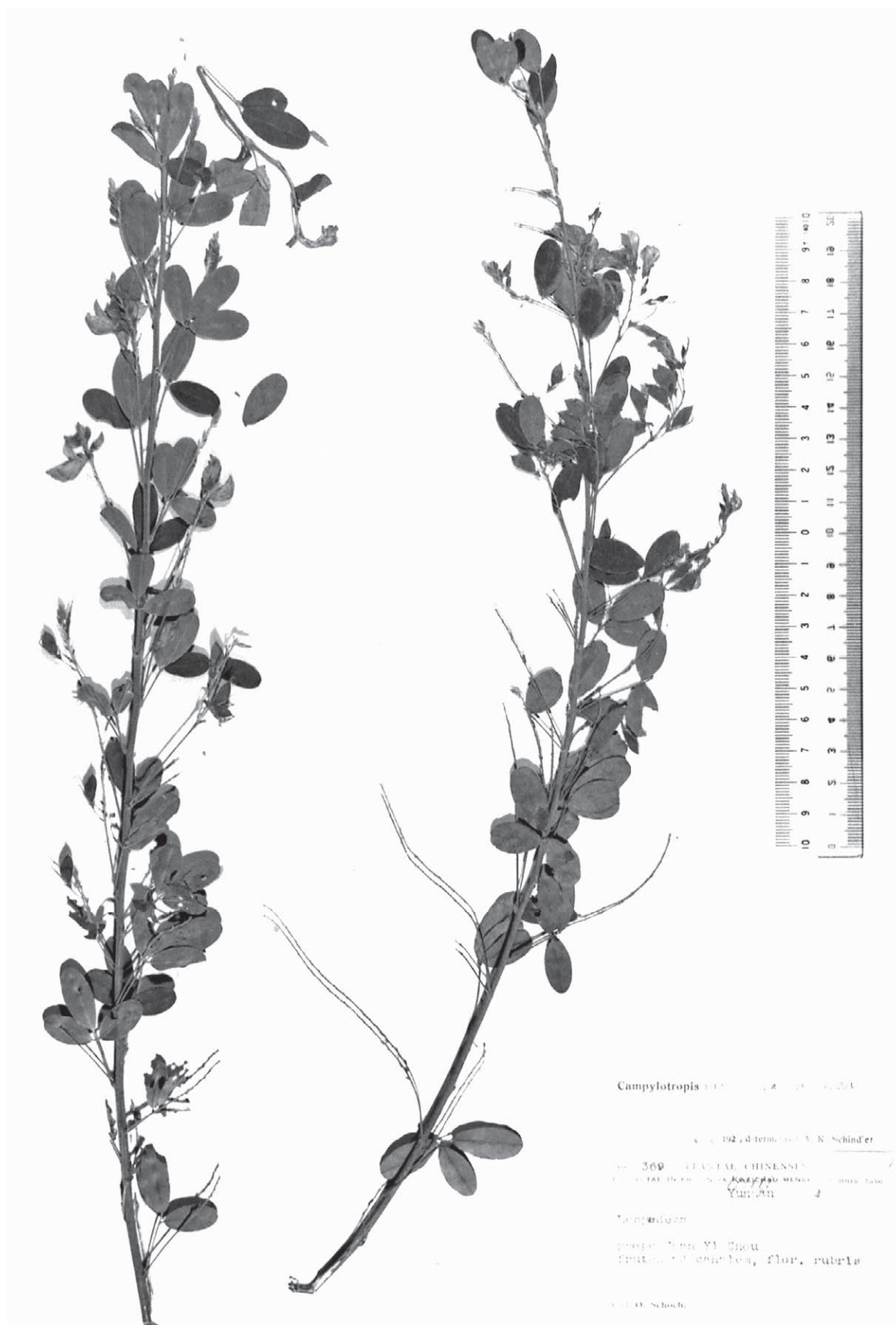


Fig. 7. *Campylotropis polyantha* (Bunge) Rehder from Yunnan, Schoch 369 (A), an example that was misidentified as *C. macrocarpa*.

Specimens of *Campylotropis macrocarpa* at least from Yunnan should be reexamined. Recently, *C. macrocarpa* is naturalized in Japan by import of seeds from China for road construction (Ohashi et al. 2003).

20. ***Campylotropis pauciflora*** C. J. Chen: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 276 (2002).

Distribution: China (Yunnan).

21. ***Campylotropis pinetorum*** (Kurz) Schindl.

Distribution: China (Guangxi, Guizhou and Yunnan).

#### Key to the subspecies:

1. Leaflets ovate to elliptic, apex acute; branches, inflorescence rachis, calyces and both surfaces of leaflets densely white pubescent ..... subsp. *albopubescens*
1. Leaflets oblong to narrowly ovate, apex rounded or obtuse; branches, inflorescence rachis, calyces and lower surface of leaflets tawny velutinous ..... subsp. *velutina*

21-1. *C. pinetorum* subsp. ***albopubescens*** (Iokawa & H. Ohashi) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 282 (2002).

Distribution: China (Yunnan).

21-2. *C. pinetorum* subsp. ***velutina*** (Dunn) H. Ohashi: P. Y. Fu, FRPS. **41**: 126 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 282 (2002); X. F. Gao, Fl. Yunnan. **10**: 555 (2006).

Distribution: China (Guangxi, Guizhou and Yunnan).

*Campylotropis pinetorum* subsp. *pinetorum* is not recorded from China, but occurs in Laos, Myanmar, Thailand and Vietnam.

22. ***Campylotropis polyantha*** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 118 (1995); P. H. Huang, High. Pl. China **7**: 181 (2001);

Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 315 (2002); X. F. Gao, Fl. Yunnan. **10**: 565 (2006).

Distribution: China (Guizhou, Sichuan, Yunnan and Xizang).

#### Key to the infraspecific taxa:

1. Bracts 3–5 mm long, persistent until fruiting; pedicels 7–9 mm long ..... var. *neglecta*
1. Bracts 1–3.5 mm long, caducous before flowering; pedicels 3–8 mm long (var. *polyantha*) ..... 2
2. Lateral surface of pods glabrous ..... f. *leiocarpa*
2. Lateral surface of pods pubescent ..... f. *polyantha*

22-1. *C. polyantha* var. ***polyantha***: P. Y. Fu, FRPS. **41**: 118 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 318 (2002); X. F. Gao, Fl. Yunnan. **10**: 565 (2006).

22-1-1. *C. polyantha* f. ***polyantha***: P. Y. Fu, FRPS. **41**: 118 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 318 (2002); X. F. Gao, Fl. Yunnan. **10**: 565 (2006).

*C. polyantha* (Franch.) Schindl. f. *macrophylla* P. Y. Fu: P. Y. Fu, FRPS. **41**: 120 (1995); X. F. Gao, Fl. Yunnan. **10**: 566 (2006).

*C. polyantha* f. *souliei* (Schindl.) P. Y. Fu: P. Y. Fu, FRPS. **41**: 120 (1995).

*C. polyantha* var. *tomentosa* P. Y. Fu: P. Y. Fu, FRPS. **41**: 121 (1995); X. F. Gao, Fl. Yunnan. **10**: 566 (2006).

*C. tomentosipetiolata* P. Y. Fu: P. Y. Fu, FRPS. **41**: 120 (1995); X. F. Gao, Fl. Yunnan. **10**: 568 (2006).

22-1-2. *C. polyantha* f. ***leiocarpa*** (Pamp.) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 319 (2002).

*C. polyantha* var. *leiocarpa* (Pamp.) E. Peter: P. Y. Fu, FRPS. **41**: 121 (1995); X. F. Gao, Fl. Yunnan. **10**: 566 (2006).

Distribution: China (Guizhou, Sichuan, Yunnan and Xizang).





Fig. 8. Morphological variation in *Campylotropis polyantha* (Franch.) Schindl. var. *polyantha* f. *polyantha*. a: Soulie 3969 (P), isotype of *C. souliei* Schindl., a form with narrow leaflets. b: S. K. Wu 2552 (PE), isotype of *C. tomentosipetiolata* P. Y. Fu., a form with tomentose wide elliptic leaflets. c: C. C. Lu 63206 (PE), isotype of *C. polyantha* f. *macrophylla* P. Y. Fu., a form with large leaflets. d: C. W. Wang 83763 (KUN), paratype of *C. polyantha* var. *tomentosa* P. Y. Fu., a form with tomentose obovate leaflets.

22-2. *C. polyantha* var. **neglecta** (Schindl.) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 319 (2002).

*C. neglecta* Schindl.: P. Y. Fu, FRPS. **41**: 112 (1995); X. F. Gao, Fl. Yunnan. **10**: 562 (2006).

Distribution: China (Yunnan).

*Campylotropis polyantha* (Franch.) Schindl. shows variation in morphology and several forms have been distinguished as taxa (Fig. 8). We recognized two forms as distinct: var. *neglecta* and var. *polyantha* f. *leiocarpa*.

23. **Campylotropis sargentiana** Schindl.: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 319 (2002).

Distribution: China (Sichuan).

Fu (1987, 1995) treated this species as identical with *C. polyantha*, but the latter has distinct glandular hairs on inflorescences.

24. **Campylotropis speciosa** (Royle ex Schindl.) Schindl.: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 320 (2002).

subsp. **eriocarpa** (Schindl.) Iokawa & H. Ohashi: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 325 (2002).

Distribution: China (Xizang), Bhutan, India (Assam) and E. Nepal.

Subsp. *speciosa* is distributed in Western and central Nepal and India (Uttar Pradesh and Himachal Pradesh).

25. **Campylotropis sulcata** Schindl.: P. Y. Fu, FRPS. **41**: 126 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 326 (2002); X. F. Gao, Fl. Yunnan. **10**: 554 (2006).

*C. rockii* Schindl.: P. Y. Fu, FRPS. **41**: 100 (1995); X. F. Gao, Fl. Yunnan. **10**: 553 (2006).

Distribution: China (Yunnan) and Thailand.

26. **Campylotropis tenuiramea** P. Y. Fu: P. Y. Fu, FRPS. **41**: 109 (1995); Iokawa &

H. Ohashi in J. Jpn. Bot. **77**: 329 (2002); X. F. Gao, Fl. Yunnan. **10**: 563 (2006).

Distribution: China (Yunnan).

27. **Campylotropis teretiracemosa** P. C. Li & C. J. Chen ex C. J. Chen: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 329 (2002).

Distribution: China (Sichuan).

28. **Campylotropis thomsonii** (Benth. ex Baker) Schindl.: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 331 (2002).

*C. kingdonii* H. Ohashi in J. Jpn. Bot. **49**: 105 (1974); X. F. Gao, Fl. Yunnan. **10**: 554 (2006).

Distribution: China (Yunnan), India (Assam), Myanmar and Vietnam.

This species was reported by Gao (2006) from China (Yunnan) for the first time under *Campylotropis kingdonii*.

29. **Campylotropis trigonoclada** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 105 (1995); P. H. Huang, High. Pl. China **7**: 180 (2001); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 333 (2002); X. F. Gao, Fl. Yunnan. **10**: 559 (2006).

Distribution: China (Guangxi, Guizhou, Sichuan and Yunnan).

#### Key to the varieties:

1. Flowers purple; young branches, leaflet lower surface and inflorescence rachis pubescent ..... var. *bonatiana*
2. Flowers yellow; plants glabrescent ..... var. *trigonoclada*

29-1. *C. trigonoclada* var. **trigonoclada**: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 338 (2002).

Distribution: China (Guangxi, Guizhou, Sichuan and Yunnan).

29-2. *C. trigonoclada* var. **bonatiana** (Pamp.) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 339 (2002).

*C. bonatiana* (Pamp.) Schindl.: P. Y. Fu,

FRPS. **41**: 105 (1995); P. H. Huang, High. Pl. China **7**: 180 (2001); X. F. Gao, Fl. Yunnan. **10**: 559 (2006).

Distribution: China (Yunnan).

30. **Campylotropis wenshanica** P. Y. Fu, ut *C. wenshaaica*: P. Y. Fu, FRPS. **41**: 109 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 339 (2002); X. F. Gao, Fl. Yunnan. **10**: 560 (2006).

Distribution: China (Yunnan).

The specific epithet was published as “*wenshaaica*”, but is a misprint of “*wenshanica*”.

31. **Campylotropis wilsonii** Schindl. in Repert. Spec. Nov. Regni. Veg. **11**: 343 (1912) [**Type**: China. Sichuan. Wilson 3387 (lecto A, designated here; isolecto PE)]: P. Y. Fu, FRPS. **41**: 127 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 341 (2002).

*C. yajiangensis* P. Y. Fu: P. Y. Fu, FRPS. **41**: 108 (1995), p. p., excl. var. *deronica* P. Y. Fu.

Distribution: China (Sichuan).

Schindler (1912) described *Campylotropis wilsonii* Schindl. based on three specimens, Wilson 3387, Wilson 3387a, and Potanin kept in BM, A, LE. We designate here Wilson 3387 (A) as the lectotype (Fig. 9).

32. **Campylotropis yunnanensis** (Franch.) Schindl.: P. Y. Fu, FRPS. **41**: 127 (1995); Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 342 (2002); X. F. Gao, Fl. Yunnan. **10**: 568 (2006).

Distribution: China (Sichuan and Yunnan).

### Key to the subspecies:

1. Inflorescence rachis and pedicels sparsely appressed short hairy; pedicels 5–14 mm long ..... subsp. *filipes*
1. Inflorescence rachis and pedicels ascending or patent short hairy; pedicels 2.5–5 (–7) mm long ..... subsp. *yunnanensis*

32-1. *C. yunnanensis* subsp. **yunnanensis**: Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 345 (2002).

*C. yunnanensis* var. *zhongdenensis* P. Y. Fu: P. Y. Fu, FRPS. **41**: 129 (1995), ut var. *zhongdianensis* P. Y. Fu; X. F. Gao, Fl. Yunnan. **10**: 569 (2006).

Distribution: China (Yunnan).

32-2. *C. yunnanensis* subsp. **filipes** (Ricker) Iokawa & H. Ohashi in J. Jpn. Bot. **77**: 345 (2002).

*C. yunnanensis* var. *filipes* (Ricker) P. Y. Fu: P. Y. Fu, FRPS. **41**: 129 (1995).

Distribution: China (Sichuan).

### Distribution of *Campylotropis* in China

*Campylotropis* is distributed mainly in China and extends west to India through Indo-China, south to Java and east to Korea (Ohashi 2005). Of 37 species in the genus 31 are recorded by Iokawa and Ohashi (2002) as occurring in China. Recently, Gao (2006) added *C. kingdonii* to China which was regarded by Iokawa and Ohashi (2002) as a synonym of *C. thomsonii*. We recognize 32 species of the genus in this paper as native to China. Distribution of the species in China is shown in Fig. 12 in which the number of species is indicated in each province.

Among the 32 species recorded, 20 are endemic to China. Among the endemic species except *Campylotropis alba* which was recorded only in SW China and its exact locality is unknown, nine are confined to Yunnan; three to Sichuan; one to Xizang; six to more than two Provinces including Yunnan, Sichuan or Xizang.

The remaining 12 are distributed in China and neighboring countries: *Campylotropis bonii*, *C. capillipes*, *C. cytisoides*, *C. decora*, *C. harmsii*, *C. hirtella*, *C. luhitensis*, *C. macrocarpa*, *C. pinetorum*, *C. speciosa*, *C. sulcata*, and *C. thomsonii*. Among them, however, infraspecific taxa included in the following species are endemic to China: *C. capillipes* subsp. *capillipes* (but subsp.



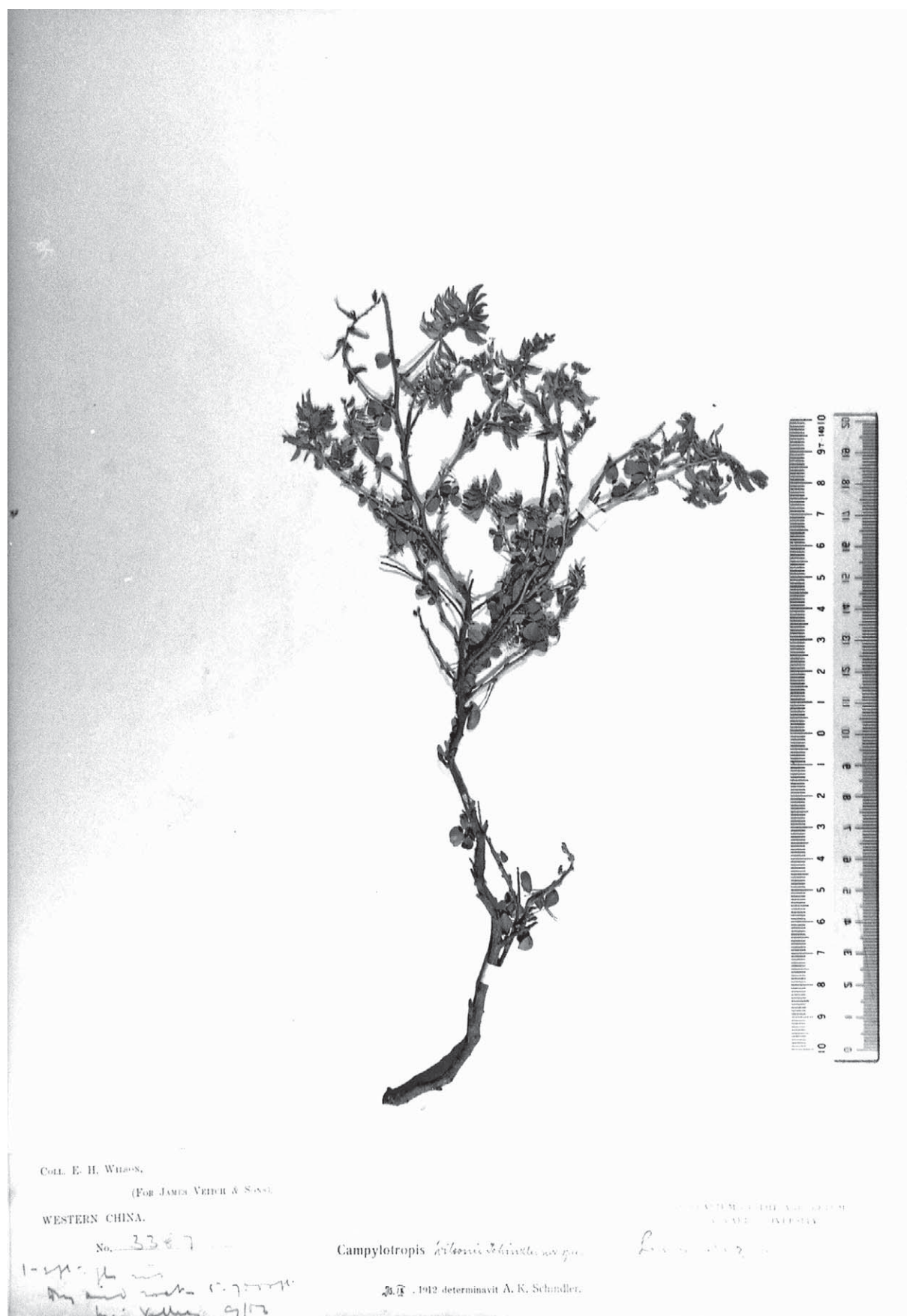


Fig. 9. Lectotype of *Campylotropis wilsonii* Schindl. Wilson 3387 (A).

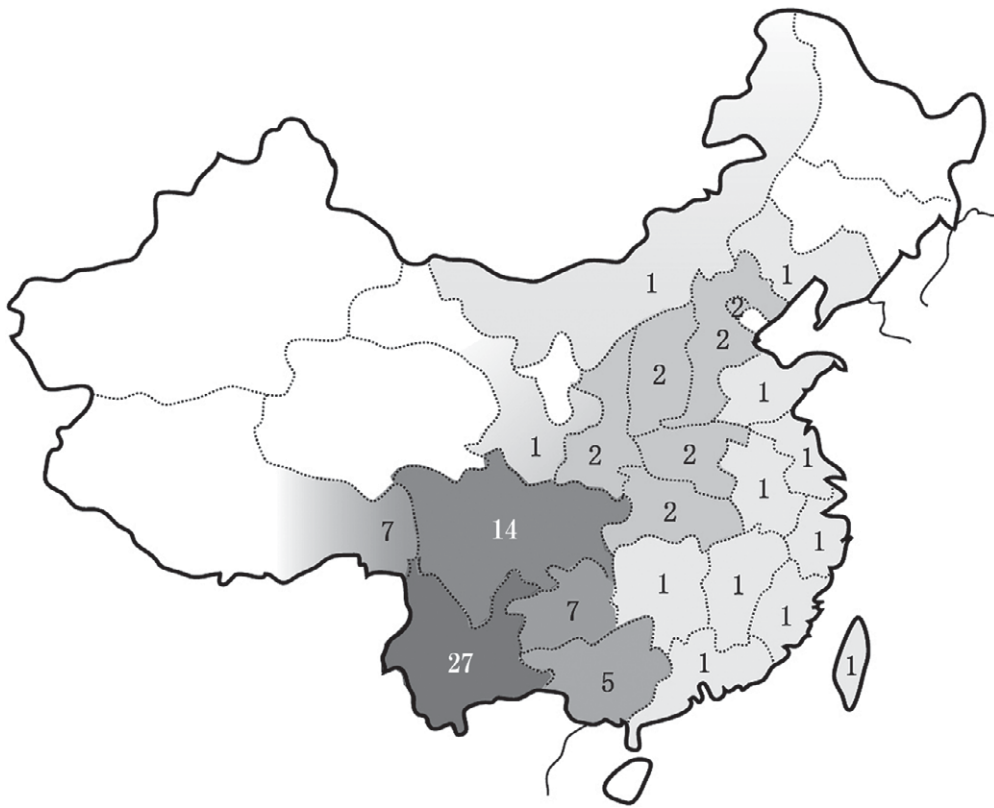


Fig. 10. Distribution of *Campylotropis* in China showing the number of taxa in each province, e.g., 27 in Yunnan, 14 in Sichuan, etc. Distribution in Xizang is confined in southeastern part.

*prainii* is in China, Myanmar and Thailand), *C. macrocarpa* var. *hupehensis* and var. *macrocarpa* f. *alba* (but var. *macrocarpa* f. *macrocarpa* is in China and Korea), *C. pinetorum* subsp. *albopubescens* and subsp. *velutina* (but subsp. *pinetorum* is in Laos, Myanmar, Thailand and Vietnam).

Yunnan is the central province for distribution of *Campylotropis*. It has 12 endemic taxa, i.e., nine species, one subspecies and two varieties. They are *Campylotropis argentea*, *C. diversifolia*, *C. fulva*, *C. grandifolia*, *C. howellii*, *C. latifolia*, *C. pauciflora*, *C. pinetorum* subsp. *albopubescens*, *C. polyantha* var. *neglecta*, *C. tenuiramea*, *C. trigonoclada* var. *bonatiana* and *C. wenshaaica*. The following 15 taxa are also found in Yunnan: *C. capillipes* subsp. *capillipes*, *C. capillipes* subsp. *prainii*, *C. cytisoides* f. *parviflora*, *C.*

*decora*, *C. delavayi*, *C. harmsii*, *C. henryi*, *C. hirtella*, *C. pinetorum* subsp. *velutina*, *C. polyantha* f. *leiocarpa*, *C. polyantha* f. *polyantha*, *C. sulcata*, *C. thomsonii*, *C. trigonoclada* var. *trigonoclada* and *C. yunnanensis* subsp. *yunnanensis*. *Campylotropis macrocarpa* is excluded from Yunnan, because its identification seems to be dubious, although it is recorded by Huang (2001) and Gao (2006) in the province as noted in the enumeration above. In total 27 taxa of *Campylotropis* occur in Yunnan (Fig. 10).

Sichuan is the second province in distribution of *Campylotropis*, but the number of taxa is remarkably fewer than in Yunnan. It has four endemic taxa: *C. sargentiana*, *C. teretiracemosa*, *C. wilsonii* and *C. yunnanensis* subsp. *filipes*. The following ten taxa are also found in Sichuan: *C. brevifolia*,

*C. capillipes* subsp. *capillipes*, *C. delavayi*, *C. hirtella*, *C. macrocarpa* var. *hupehensis*, *C. macrocarpa* f. *macrocarpa*, *C. polyantha* f. *leiocarpa*, *C. polyantha* f. *polyantha*, *C. trigonoclada* var. *trigonoclada* and *C. yunnanensis* subsp. *yunnanensis*. In total 14 taxa are known in Sichuan.

Xizang in the southeastern part has seven taxa including one endemic species, *Campylotropis alopochroa*; Guizhou has seven and Guangxi has five taxa.

The remaining provinces are remarkably poor in species number than the provinces listed above as shown in Fig. 10.

We are grateful to the herbaria A, GH, K, PE, TI and TUS for allowing us to examine their specimens for this study. We thank Dr. Anthony Brach in A for his help in references and Drs. Jin Murata in TI, Hidetoshi Nagamasu in KYO and Kazuaki Ohashi in Osaka University for their comments on the manuscript.

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## 五百川 裕, 大橋広好: 中国産マメ科ハナハギ属の種類と分布

中国のハナハギ属 *Campylotropis* について *Flora of China* の原稿にまとめるために, 主として Iokawa and Ohashi (2002, 2004) を基礎として, 新たに検索表を作り, 種類と学名を再検討し, 新たに *Campylotropis argentea*, *C. capillipes*, *C. grandifolia*, *C. harmasii*, *C. henry*, および *C. wilsonii* のレクトタイプを選定し, 中国における分布を整理した.

中国西南部はハナハギ属の分布の中心で, 特に雲南省からは多くの種類が記載されている (Fu 1987, Iokawa and Ohashi 2002, Ohashi 2005). 中国のハナハギ属は傅 沛云 Fu Peiyun (1987, 1995) が全体を研究し, 28 (1 亜種を含む) 種 6 変種 6 品種に整理した. 一方, Iokawa and Ohashi (2002, 2004) は属全体のモノグラフをまとめ, 37 種 6 亜種 3 変種 3 品種に分類した. その中で中国の種類として 31 (2 亜種 1 変種 1 品種を含む) 種 3 亜種 3 変種 2 品種を認めた. 中国の種類についての両方の分類を一覧として表 1 にまとめた. さらに最近, 高 信芬 Gao Xinfen (2006) は雲南省のハナ

ハギ属をまとめ, ミャンマーから記載された *C. kingdonii* H. Ohashi を新たに雲南省から記録した. しかし, Iokawa and Ohashi (2002) はこの種を *C. thomsonii* (Baker) Schindl. と同一種と考えている. そこで, 本論文では Iokawa and Ohashi (2002, 2004) による 31 種類に *C. thomsonii* を加えて, 中国の種類は 32 種 3 亜種 3 変種 2 品種とした.

中国におけるハナハギ属の分布を, 省ごとの種数でまとめ, 図 10 に示した. 32 種のうち 20 種が中国に固有で, 固有種の分布についてみると, 雲南省 9 種, 四川省 3 種, 西藏自治区 1 種, 6 種は雲南, 四川, 西藏を含む複数の省に分布し, 1 種は西南中国とだけ記録され, 雲南, 四川, 貴州のいずれかである. 雲南省はハナハギ属の分布の中心であり, 12 固有分類群を含めて, 全体で 27 分類群が記録されている. これに次ぐのは四川省で, 14 分類群である.

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